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## **DATA SHIFTER WITH MOBILE CONTROL DEVICE**

### **BACKGROUND OF THE INVENTION**

#### **1. Field of The Invention:**

The present invention relates to a data shifter or known as KVM switch  
5 box, and particularly to a data shifter having a mobile control device.

#### **2. Description of Related Art:**

Due to the development of computer product changing rapidly and the  
computer system having been kept popularly using, a person operating two or  
more computers and a company or a factory increasing their main units of  
10 computer network become very normal arrangements can be reached. In order to  
avoid the periphery device for a computer being bought in addition repeatedly and  
to save the available space, a data shifter, which makes the peripheries such as a  
set of keyboard, a video device, a display, and a mouse serve multiple computers,  
was developed for these purposes. Because of progress of technology, the original  
15 data shifter with mechanical contact switch for the keyboard, the video device, and  
the mouse (their combinational abbreviation is known as KVM switch box) has  
been changed to a data shifter with automatic electronic scanning gradually.

However, the computer has the hardware specification and the operation  
system thereof kept changed progressively such that the electronic data shifter  
20 usually has to be renewed in accordance with the variation of hardware and system  
structure as soon as the user has renewed the hardware and the operation system.  
For the user or for the manufacturer having sold the old model of data shifter, a  
hard problem is how to update the control program.

Presently, a way mostly adopted by the manufacturer making the  
25 electronic data shifter mostly adopts is to replace the entire data shifter (i.e. the so  
called upgraded device). But, this way incurs the user extra expenditure.

Alternatively, the user asks the technical person to come over and detach the data shifter for renewing the hardware and the software therein. Although this is a new way for updating the data shifter, it is costly and it is necessary to shut down the connected computer system and detach all connecting wires for disconnect before renewal or replacement. Because the computer system is unable to be operated during renewing or replacing the data shifter, it results in extreme inconvenience to the user. Moreover, it is not possible to renew data shifters for all customers in a short time in case of the manufacturer sending the technical service staff to carry out the job of renewal at each customer place such that it must be resulting in a delay of time and complaint of customers.

### **SUMMARY OF THE INVENTION**

An object of the present invention is to provide a data shifter with mobile control device, which is possible for a user to renew the mobile control device easily without the need of detaching connecting wires and any other technical person's help.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

The present invention can be more fully understood by referring to the following description and accompanying drawings, in which:

Fig. 1 is an exploded perspective view of a data shifter according to the present invention; and

Fig. 2 is a perspective view of the data shifter shown in Fig. 1 illustrating the components thereof being assembled together except an upper cover.

### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

Referring to Figs. 1 and 2, the data shifter of present invention basically comprises a main casing 1 and a mobile device 2.

Wherein, the main casing 1 is a detachably closed box, that is, the main casing 1 is associated with an upper cover A. The main casing 1 at the front side thereof provides a control panel B and a control interface C, and these are prior art so that no detail will be described further. The main casing 1 is provided with a primary circuit board 11 and the primary circuit board 11 provides electric circuits at the front part and the rear part thereof on one of lateral facial sides thereof to connect with the control interface C and a plurality of connecting interfaces 12. In practice, these connecting interfaces 12 are connectors 121, 122, 123 for connecting with a keyboard, a mouse, and a display respectively, and a plurality of computer connectors 124. The primary circuit board 11 at the other lateral facial side provides a periphery control circuit so as to receive instructions of control interface C for selectively controlling the preceding connecting interfaces 12. In addition, at least a main connector 13 projects outward from the primary circuit board 11 at one of lateral facial sides thereof and the main casing 1 provides an opening 14 at a side edge being opposite to and corresponding to the main connector 13 so as to be feasible for the mobile device 2 detachably inserting into the main casing 2.

Furthermore, the primary circuit board 11 at the portion between the main connector 13 and the opening 14 may be provided with a locating device 15 for the mobile device 2 being withdrawn smoothly and being inserted accurately. In practice, the locating device 15 is comprised of two oppositely positioned slide rails 151 preferably so that a secondary circuit board 21 in the mobile device 2 can move along slide rails 151.

The mobile device 2 is a box or a frame with a size corresponding to the opening 14 and the secondary circuit board 21 extends laterally with auxiliary connectors 22 thereon to correspond to the respective main connector 13. Thus, the auxiliary connectors 22 can engage with the main connectors 13 respectively for signal conduction. Besides, at least a control chip 23 with built-in programs so as to offer the main circuit board 13 control programs. Moreover, a rear protect

plate 24 can close the opening 14 tightly by way of conventional fastening device 25. As shown in Figs. 1 and 2, the fastening device 25 is comprised of screw threads to pass through engaging holes in the rear protect plate 24 and to engage with preset holes surrounding the opening 14 such that the mobile device 2 may be  
5 fixedly attached to the main casing 1.

Referring to Figs. 1 and 2 again, the mobile device 2 is simply aligned with and inserted into the opening 14 while the data shifter of present invention is assembled such that the secondary circuit board 21 can move along two slide rails 151. When the auxiliary connectors 22 engage with main connectors 13, it means  
10 the mobile device 2 is in a state of being located. Finally, screw threads 251 are turned by hands to fasten the rear protect plate 24 to the opening 14 tightly. As soon as the data shifter of present invention has been assembled completely, the user can control specific periphery device or the main unit of computer by way of control interface C. When the hardware or the software in the computer is replaced  
15 or updated, the user or the supplier is simply needed to take out the mobile device 2 from the main casing 1 such that a new mobile device 2 bearing a new control program can be slid into the data shifter, or the control chip 23 is replaced by one bearing a new control program before the mobile device 2 being slid into the data shifter again. Thus, the connecting lines between the main casing 1 and the  
20 connecting interfaces 12 are not necessary to change substantially. It is extremely handy to operate in case of need.

It can be understood from above description with regard to a preferred embodiment of present invention that the present invention offers advantages listed hereinafter:

25 1) When the data shifter of present invention is produced, an identical main casing can match different control programs (control programs are burned in the control chips) or different control chips to constitute different models. In this way, the pressure of great inventory can be avoided to lower the production cost and to achieve a purpose for obtaining a variety of products.

2) It is convenient for product maintenance and renewal. From the manufacturer side, the inventory can be provided just for replacing new mobile device or for control chips needed to burn new programs therein. From the user side, the sophisticate procedure for detaching all the connecting wires can be avoided and it is not necessary to ask the manufacturer or the distributor for replacing or renewal once a new mobile device can be easily got and he can carry out without any difficulty. Hence, this is an effect to benefit both sides substantially.

3) It is easy for the user to take out the mobile device without the need of any special tool. Because the mobile device is fastened to the main casing at the opening by way of conventional engaging device such as screw threads or retaining projections, it is not necessary to use any other tool for withdrawal of mobile device. Hence, the user can perform to replace the mobile device himself.

4) As soon as an old mobile device from a customer or a distributor is sent to the manufacturer, a new program can be burned into the control chip of respective old mobile device. Thus, a wasteful resource can be avoided and a purpose with regard to reduction of waste can achieved effectively.

5) The present invention provides a great flexibility for being a variety of models. The main casing of present invention can connect with multiple main units in a computer system regardless of the computer system having 2, 4, 6, 8, 16... main units. The only job has to do is to change connecting interfaces and it is not necessary to change the mobile device, which has modularized design.

While the invention has been described with reference to preferred embodiment thereof, it is to be understood that modifications or variations may be easily made without departing from the spirit of this invention, which is defined by the appended claims.